REMARKS

The Examiner rejects claims 1-5, 7-9, 12, 14-15, 17-27, 29-31, 34, 36-37, and 39-42 under 35 U.S.C. Section 103(a) as being unpatentable over Shaffer, et al., (US 7,023,839) in view of Graham, et al., (US 6,097,722) and further in view of Johnsson (US 2002/0006131) and claims 13, 16, 35, and 38 under Section 103(a) as being unpatentable over Shaffer, et al., in view of Graham and Johnson as applied to claims 1 and 23 above and further in view of Lachman, III, et al. (US 2002/0166063).

Applicant respectfully traverses the Examiner's rejections. The cited references fail to teach or suggest at least the following italicized limitations of independent claims 1 and 23:

1.   A method for performing call admission control, comprising:

(a) *determining at least one of (i) a bandwidth utilization level for a first path including a first link, and (ii) an available bandwidth level for the first path and one or more Quality of Service or QoS metrics for the first path*;

(b) comparing the determined at least one bandwidth level *and* the one or more Quality of Service or QoS metrics to one or more selected thresholds to determine whether a new live voice communication may be set up with a first selected codec;

(c) when a new live voice communication may not be set up with the first selected codec, performing at least one of the following steps:

(i) selecting a second different codec from among a plurality of possible codecs for the new live voice communication, wherein the second codec has a lower bit rate than the first codec;

(ii) *changing an existing live voice communication from the first codec to the second codec*; and

(iii) *redirecting the new live voice communication from the first path to a second different path, wherein the second path does not include the first link.*

23.   A call admission controller, comprising:

a processor operable to:

(a) *determine at least one of (i) a bandwidth utilization level for a first path including a first link, and (ii) an available bandwidth level for the first path, and one or more Quality of Service or QoS metrics for the first path*;

(b) compare the determined at least one bandwidth level *and* the one or more Quality of Service or QoS metrics to one or more selected thresholds to determine whether a new live voice communication may be set up with a first selected codec; and

(c) when a new live voice communication may not be set up with the first selected codec, perform at least one of the following operations:

(i) select a second different codec from among a plurality of possible codecs for the new live voice communication, wherein the second codec has a lower bit rate than the first codec;

10

> > (ii) *change an existing live voice communication from the first codec to the second codec*; and
> > (iii) *redirect the new live voice communication from the first path to a second different path, wherein the second path does not include the first link.*

Shaffer, et al.

Shaffer, et al., are directed to a bandwidth adjustment server (BWAS) (109), which monitors system bandwidth usage, sends requests to terminals (102A, 102B and/or 106), to identify their coding capabilities, and directs each of the terminals to adjust their coding algorithms based on system bandwidth usage. If system bandwidth usage is high, the BWAS (109) requires the terminals to employ a less bandwidth intensive coding algorithm; similarly, when system bandwidth usage is low, the BWAS (109) will allow the terminals to employ higher bandwidth use coding algorithms. Codec renegotiation may be initiated if there is a disparity between the bandwidth allocated to new connections versus ongoing connections or an increase in data traffic.

The bandwidth monitor 306 monitors bandwidth usage, for example, by counting a number of active calls being processed by the gatekeeper, monitoring bit rates, and the like. (Col. 5, lines 4-8.) At col. 3, line 1, to col. 8, line 48, the bandwidth monitor 306 reconfigures codec settings for new calls but not existing calls. At col. 8, line 12, to col. 9, line 58, the bandwidth monitor 306 renegotiates codec usage while calls are ongoing.

As admitted by the Examiner, Shaffer, et al., fail to disclose determining one of the bandwidth utilization, available bandwidth level, and QoS metric with respect to a *particular* path including a *particular* link. For this teaching, the Examiner relies on Graham, et al.

Graham, et al.

Graham, et al., discloses a system control module that is centralized for a first and second asynchronous transfer mode switches. The physical interface has a corresponding utilization level. The system control module periodically and continuously checks the utilization level to determine what the corresponding bandwidth should be.

In determining whether a network connection can be made, the centralized call admission/usage monitor module 145 considers factors such as terms and conditions of a network contract agreement covering the virtual connection, type of information that the virtual connection will transfer (e.g., constant bit rate information, voice information, video information,

11

variable bit rate information, data information, connection-oriented information, frame-relay information, and connectionless information), the quality of service expected of the virtual connection, existing traffic load of the network, and the utilization of the network.

When a request to place a call is received, the centralized call admission/usage monitor module 145 generally performs the following steps: (i) checking with the agreement to determine whether the parameter requirements of the virtual connections are compliant with the agreement, (ii) checking with the agreement governing quality of service requests to determine whether the quality of service requirements of the virtual connections are compliant with the agreement, and (iii) determining whether the virtual connection has any available capacity. If the network is not in an overload condition and the control module does not otherwise allow(or object to) the creation of the virtual connection, the control module may allow the virtual connection to be set tip in unspecified capacity of the network. The module 145 can instruct bandwidth manager module 150 to adjust dynamically the size of each virtual path, virtual channel, and virtual path group. Resizing may include creation and destruction of virtual channels to make room for the requested virtual channel.

Johnsson

While admitting that neither Shaffer, et al., nor Graham, et al., disclose comparing bandwidth measure(s) and QoS characteristic(s), the Examiner cited Johnsson for this teaching. Johnsson is directed to the division of a cellular network into resource domains, with each domain being provided with a prediction connection admission control unit. The unit includes information about available resources through its own resource domain as well as information about available resources for connections through other resource domains. Admission control is performed using a protocol similar to RSVP. At paragraphs [0024] and [0030], Johnsson teaches the consideration of whether both bandwidth requirements and QoS can be met before agreeing to reserve resources.

By teaching that both bandwidth requirements and QoS must be met before agreeing to reserve resources, Johnsson teaches away from the claimed invention's use of *both* collected QoS characteristics (or network state) and bandwidth measures *in selecting a proper codec. According to Johnsson, the failure of the bandwidth measures and QoS characteristics to satisfy selected threshold would bar selection of a codec and not lead to selection of a different codec.*

Accordingly, the pending claims are allowable.

12

The dependent claims provide added reasons for allowance.

By way of example, dependent claims 3 and 25 require each of a plurality of codecs to have a corresponding bit rate and/or required wherein each of a plurality of codecs has a corresponding bit rate and/or required utilization threshold and the selecting step comprises:

comparing at least one of the available bandwidth level and the bandwidth utilization level with the plurality of bit rates and/or utilization thresholds; and

selecting the highest quality codec having a corresponding bit rate and/or utilization level permitted by the at least one of the available bandwidth level and the bandwidth utilization level..

Dependent claims 5-6 and 27-28 are directed to the further steps/operations of:

(B1) adjusting the one or more QoS metrics to reflect placing the new live voice communication with the first selected codec;

(B2) determining whether the adjusted one or more QoS metrics are acceptable in view of selected thresholds; and

(B3) applying the following rules:

(B3i) when the adjusted QoS metrics are acceptable, setting up the new live voice communication with the first selected codec; and

(B3ii) when the adjusted QoS metrics are not acceptable, performing the comparing step/operation.

Dependent claims 6 and 28 require, when there is no codec from among the plurality of codecs that satisfies the one or more thresholds, the step/operation of performing one or more of blocking the new live voice communication and redirecting the new live voice communication from a packet-switched network to a circuit-switched network.

Dependent claims 11 and 33 require that the first link correspond to a first set of port numbers and the second link to a second set of port numbers, the first and second sets of port numbers to be non-overlapping, packets addressed to one of the first set of port numbers to be directed along the first link and packets addressed to one of the second set of port numbers to be directed along the second link and wherein the redirecting step/operation comprises:

selecting for the packetized live voice communication a port address from the first set of port numbers when a new live voice communication can be set up with the first selected codec and

selecting for the packetized live voice communication a port address from the second set of port numbers when a new live voice communication cannot be set up with the first selected codec.

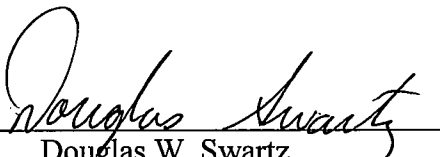Dependent claims 12-14 and 34-36 are directed to the types of bandwidth measures used.

Dependent claims 15-17 and 37-39 are directed to the comparison of a maximum threshold with an available bandwidth level.

Based on the foregoing, Applicants believe that all pending claims are in condition for allowance and such disposition is respectfully requested. In the event that a telephone conversation would further prosecution and/or expedite allowance, the Examiner is invited to contact the undersigned.

Respectfully submitted,

SHERIDAN ROSS P.C.

Date: September 9, 2008

By: _Douglas Swartz_
Douglas W. Swartz
Reg. No. 37,739
1560 Broadway, Suite 1200
Denver, Colorado 80202
Telephone: 303-863-9700